

From the Community Up

Integrating Local Knowledge with Satellite Data for Effective Disaster Response in Nicaragua

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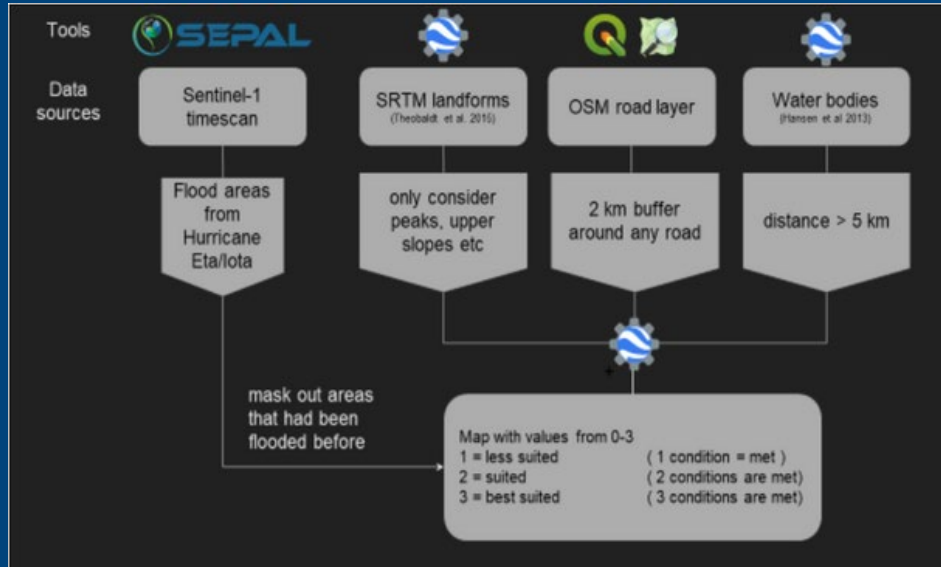
SGAC - Cosmos For Humanity - Pantera Space

Coastal Vulnerability

- NICARAGUA'S CARIBBEAN COAST FACES RECURRENT HURRICANES AND FLOODING.
- EMERGENCY PLANNING OFTEN OVERLOOKS INDIGENOUS & AFRO-DESCENDANT COMMUNITIES.
- EO DATA IS POWERFUL, BUT NOT ENOUGH ON ITS OWN.
- KEY QUESTION: HOW DO WE INTEGRATE LOCAL MEMORY WITH GLOBAL TECHNOLOGY?



The INTEGRATION MODEL



Data used and required workflow to identify suitability to building hurricane shelters.

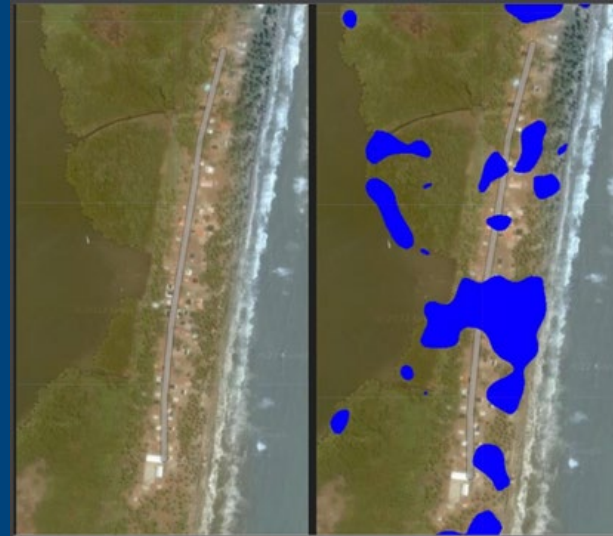
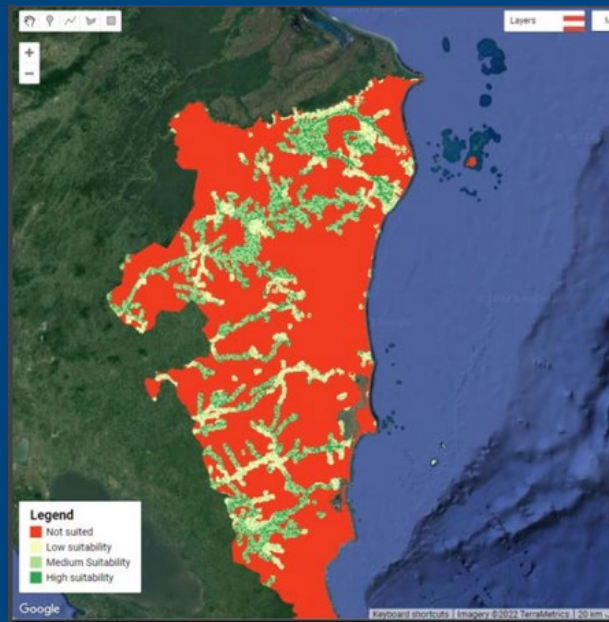
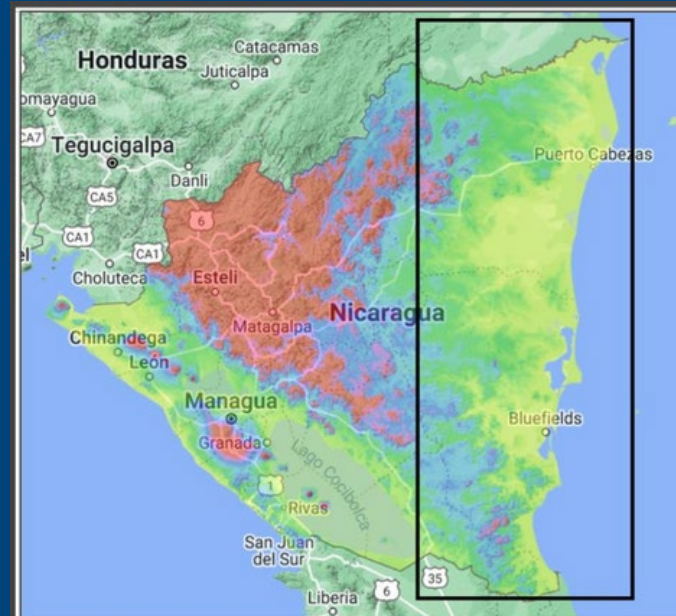


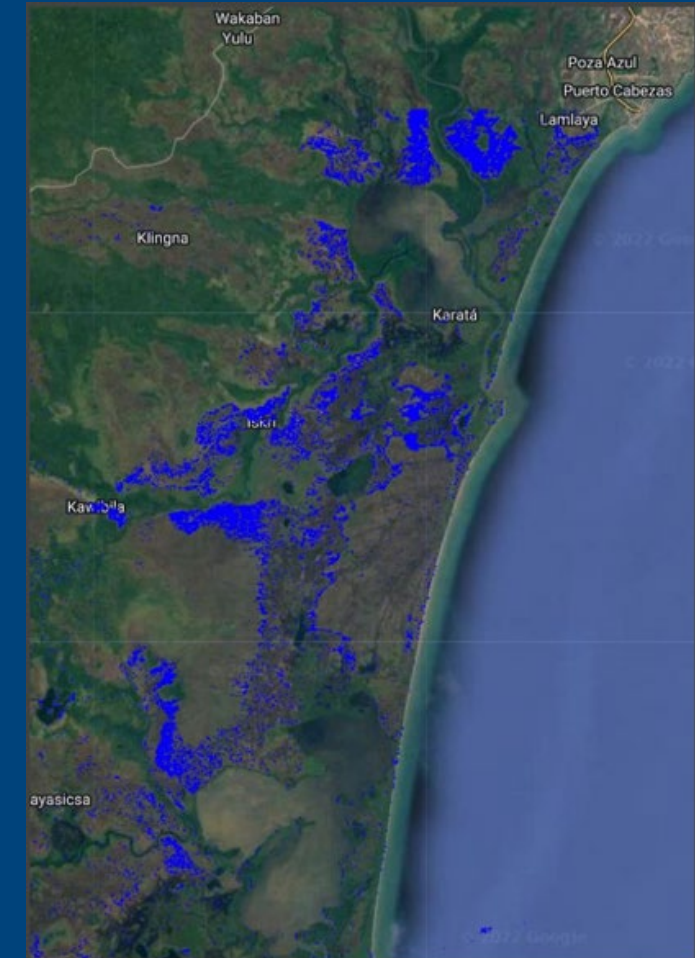
Image on the left is Haulover Community before the hurricane and image on the right the color blue indicating the flooded area during the hurricanes Eta and Iota



General overview showcasing suitability threshold on areas where to build hurricane shelters.



In black rectangle indicating low region of Nicaragua



In color blue represent the areas flooded during hurricane Eta and Iota in Haulover and other communities within the vicinity.

PILOT RESULTS AND LESSONS SCALING

- More accurate flood maps, fewer false positives.
- Identification of real-world shelters (schools, hills, churches).
- Faster & trusted communication of alerts.
- Shift from recipients → co-creators of resilience.

Pilot Results

- Trust and ethics: knowledge must be respected, not extracted.
- Community-driven approaches enhance global DRM frameworks.
- Model can scale to other vulnerable coasts (Pacific Islands, Caribbean, SE Asia).
- “Resilience begins from the community up.”

Lessons & Scaling

Thank you!

Roxy Williams

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**SUPPORT THE MISSION TO EXPAND THE
PROJECT IN THE REST OF CENTRAL
AMERICA**



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